Society of Motion Picture and Television Engineers
595 West Hartsdale Ave.
White Plains, NY 10607

SMPTE JOURNAL

Vol. 105

1996 INDEX

804 Table of Contents

807 Subject Index

813 Author Index

816 Index to Current SMPTE-Sponsored American National Standards and SMPTE Standards, Recommended Practices, and Engineering Guidelines

821 Index to American National Standards and SMPTE Standards, Recommended Practices, and Engineering Guidelines

TABLE OF CONTENTS

January - December 1996 • Volume 105

JANUARY

Message from the President, "An 80-Year Commitment to Excellence" ..... STANLEY N. BARON 3
An Introduction to Fiber Optics and Broadcasting ..... GEOFF SNELL 4
Multichannel Video Server Applications in TV Broadcasting and Post-Production ... MARK OSTLUND 8
The All-Digital Camcorder — The Arrival of Electronic Cinematography ..... LAURENCE J. THORPE and AKIO TAKEUCHI 13
A Multidimensional Evaluation of the Perceptual Quality of Television Sets ..... KEES TEUNISSEN and JOYCE H.D.M. WESTERINK 31
Experimental and Simulation Results on an OFDM Modem for TV Broadcasters ..... MASAFUMI SAITO, SHIGEKI MORIYAMA, and SHUNJI NAKAHARA 39
Comparing Oranges and Mangoes: Another View of the Emerging Digital Videodisc ..... PHILIP V. W. DODDS 46
Rochester Section Hosts "The Compression Experience" ..... THOMAS HOPE 48
30th SMPTE Advanced Motion Imaging Conference, February 1-3, 1996, Seattle 50
138th SMPTE Technical Conference, October 8-12, 1996, Los Angeles 53

PART II

SMPTE Journal Five-Year Index (1991-1995) 1-24

FEBRUARY

Message from the President, "80 Years of Commitment to the Film Community" .. STANLEY N. BARON 67
Video Compression ..... DAVID STRACHAN 68
Digital Noise Filter for Sound-Track Restoration ..... STEVEN BOSE 74
Testing Digital Video Signals ..... KONRAD FINCK 77
A Proposal for Compatibly Improving the Scrambling of SMPTE 259M .... DAVID L. HERSHBERGER 83
The Digital Wetgate: A Third-Generation Noise Reducer ..... GERHARD WISCHERMANN 95
138th SMPTE Technical Conference, October 8-12, 1996, Los Angeles 101
61-Year Member Visits SMPTE 102

MARCH

Message from the President, "Planting for the Future" ..... STANLEY N. BARON 122
A Letter of Congratulations ..... PRESIDENT BILL CLINTON 123
Letters to the Editor 124
HDTV in North America ..... DAVID STRACHAN 125
Digital TV Production and New Network Technologies: Challenging Opportunities for Broadcasters and Network Providers ..... OLE STENDER NIELSEN 130
Interactivity: An Essential Element for Broadcasting on the Information Superhighway ..... LOUIS LIBIN and KENNETH P. DAVIES 135
Simple Scalable Video Compression Using 3-D Subband Coding ..... WILLIAM E. GLENN, JOHN MARCINKA, and ROBERT DHEIN 140
The Validity of CCIR Quality Indicators Along a Graphical Scale ..... KEES TEUNISSEN 144
138th SMPTE Technical Conference, October 8-12, 1996, Los Angeles 150
Minutes of the Special Meeting of the Voting Members of SMPTE, 29 December 1995 154

APRIL

Message from the President ..... STANLEY N. BARON 171
1995 Progress Report — Foreword ..... DAVID L. GEORGE 174
Engineering Report ..... MARK S. RICHER 176
Motion Pictures ..... LINDA YOUNG 177
Television ..... ROBERT B. KISOR 179
Education ..... JOHN A. CARLSON and FUNG FAI LAM 180
AMPAS Presents Scientific and Technical Academy Awards for 1994 229
138th SMPTE Technical Conference, October 8-12, 1996, Los Angeles 231
Report on 30th SMPTE Advanced Motion Imaging Conference, February 1-3, 1996, Seattle 234

MAY

Message from the President, "Do a Colleague a Favor" ..... STANLEY N. BARON 282
The International Broadcasters Tape Numbering (IBTN) Scheme ..... PETER MARSHALL 283
A Digital Editing Suite in an Analog Environment ..... REINHARD E. WAGNER 286
Tapeless and Tape Recording Technologies for Desktop Program Production ..... H. OHSHIMA, H. OKUDA, K. ENAMI, and H. TOKUMARU 291
Telemedia: A Survival Guide to the Fifth Dimension ..... JOHN R. FORREST 299
138th SMPTE Technical Conference, October 8-12, 1996, Los Angeles 309

JUNE

Message from the President, "Reprogramming the Conference" ..... STANLEY N. BARON 338
The SMPTE D-6 Digital Recording Format ..... JÜRGEN K. R. HEITMANN 339
MPEG Video Encoding — Parallelization and Optimal Performance ..... BRIAN QUANDT and CHAMAN L. SABHARWAL 345
Video Delivery over Copper Pair and Its Role Relative to Fiber ..... GAVIN YOUNG and DON CLARKE 351
Acronyms in "The Digital Image World": References to the Vernacular You Need for Understanding the Discourse ..... FREDERICK J. KOLB, JR. 357
138th SMPTE Technical Conference, October 8-12, 1996, Los Angeles 362

JULY

Message from the President, "Mashpee Pilot Project" ..... STANLEY N. BARON 394
Timing and Synchronization Using MPEG-2 Transport Streams ..... DAVID K. FIBUSH 395
The 4:2:2 Profile of MPEG-2 for Use in a Studio Environment ..... CHRISTOF RICKEN 401
DVCPRO: A Comprehensive Format Overview .... H. UCHIDA, H. ISAKA, T. YOSHIDA, and J. SAFAR 406
The News Production Center of the Future ..... JON SHAW 419
Progress Towards a Worldwide Digital Television Standard: Status Report on International Digital Broadcasting Standards ..... STANLEY N. BARON 423
138th SMPTE Technical Conference, October 8-12, 1996, Los Angeles 427
31st SMPTE Advanced Motion Imaging Conference, February 6-8, 1997, New York City 431

AUGUST

Message from the President, "Hyperlinks and Keywords: Providing Improved Member Services on the Internet" ..... STANLEY N. BARON 459
Searching for the Perfect Aspect Ratio ..... MARK SCHUBIN 460
Digital Video and Audio Transmission Alternatives ..... KEITH Y. REYNOLDS 479
The Digital Versatile Disc (DVD): System Requirements and Channel Coding ..... KEES A. SCHOUHAMER IMMINK 483
A Noncompressed NTSC Digital Videodisk Recorder Using Magneto-Optical Media ..... T. SEKIGUCHI, T. MATSUI, S. ITOI, T. UCHIKAWA, S. ABURAI, M. MIYATAKE, and S. ARAKI 490
138th SMPTE Technical Conference, October 8-12, 1996, Los Angeles 497
31st SMPTE Advanced Motion Imaging Conference, February 6-8, 1997, New York City 498
The 10 Hottest Technologies in Telcom ..... CARLOS V. GIROD, JR. 499
Sections Officers and Managers as of July 1, 1995 500

SEPTEMBER

Message from the President, "80 Years of Service and Still Growing" ..... STANLEY N. BARON 530
The Fox Movietone News Preservation Project
An Introduction ..... ANDREW G. SETOS 532
Engineering Overview ..... R. EVANS WETMORE 537
The Continuous Motion 35mm Film Transport ..... JULIAN E. HANSEN, DANIEL C. LORTI, and ROY THRASH 541
Operational and Logistic Aspects ..... REBECCA REDSHAW and R. EVANS WETMORE 544
Optical Systems Design ..... DAVID A. GRAFTON 547
The Progressive Scan CCD Camera ..... R. BOUVY, J. VINCENT, K. PARULSKI, K. BALCH, G. ERICKSON, and M. MENADIER 551
Electronics ..... GERRY G. TAYLOR and GRAEME LITTLE 555
The Computer Control System ..... SCOTT E. HAMILTON and JEFFREY U. LONGBOTTOM 560
138th SMPTE Technical Conference, October 8-12, 1996, Los Angeles 563
31st SMPTE Advanced Motion Imaging Conference, February 6-8, 1997, New York City 565

OCTOBER

Message from the President, "Honoring the Toolmakers" ..... STANLEY N. BARON 581
Message from the Executive Vice-President ..... DAVID L. GEORGE 586
Message from the Sections Vice-President ..... FUNG FAI LAM 587
Members' Reflections on Society's Anniversary — Preface ..... EDGAR A. SCHULLER 588

SMPTE Retrospective Papers

Condensers, Their Contour, Size, Location and Support (1916) ..... C. FRANCIS JENKINS 603
Early History and Growth of the Motion Picture Industry (1926) ..... OTTO NELSON 606
The Lumière Cinematograph (1936) ..... LOUIS LUMIÈRE 608
The Past and Future Activities of the Society of Motion Picture Engineers (1946) ..... DONALD E. HYNDMAN and JOHN A. MAURER 612
Views on Our Engineering Field (1956) ..... JOHN G. FRAYNE 617
Historic Aspects of the SMPTE (1966) ..... GLENN E. MATTHEWS 619
A Short History of Standardization in the SMPTE (1976) ..... GORDON A. CHAMBERS 631
Digital Television Recording — History and Background (1986) ..... JOHN L. E. BALDWIN 632

Technical Papers

The Impact of Nonlinear Editing on the Post-Production Process ..... MICHAEL F. KORPI, COREY P. CARBONARA, and VINCENT E. YOUNG 641
A Totally Digital Camera System Using Digital Triaxial Transmission ..... N. MURATA, F. UKIGAYA, Y. ETO, N. SAKURABA, and T. DELP 647
The Lumière Cinématographe and the Grand Café Projection of 1895: A Reexamination ..... H. MARK GOSSER 653
The Internet and the Information Infrastructure: What Is the Difference? ..... PEKKA TARJANNE 657
31st SMPTE Advanced Motion Imaging Conference, February 6-8, 1997, New York City 659
1995 Financial Reports 660

NOVEMBER

Message from the President, "Reflections from the Past: A Guide to the Future" ..... STANLEY N. BARON 683
A Server-Based Post-Production System ..... BOB PANK 684
Video Application in Multimedia Systems and Computer Networks ..... NORBERT GERFELDER 689
Objective Assessment of Single and Concatenated Compression Codecs ..... CHRIS J. DALTON 698
A Statistical Analysis of MPEG-2 Picture Quality for Television Broadcasting ..... E. NAKASU, K. AOKI, R. YAJIMA, Y. KANATSUGU, and K. KUBOTA 702
A 525-Line Component Progressive Scan Outside Broadcast Vehicle ..... AKIHIRO HORI 712
31st SMPTE Advanced Motion Imaging Conference, February 6-8, 1997, New York City 718
Letters to the Editor 720
First Annual Spring Film Conference and Exhibition, Los Angeles, March 20-22, 1997 724

DECEMBER

Message from the President, "Recap of a Two-year Journey — Continuing the New Beginnings" ..... STANLEY N. BARON 739
The Evolution of Video Technologies for Distance Learning ..... AUBREY HARRIS 742
NTSC Field Rate Consideration in a DTV Simulcasting Environment: A Study Report ..... WILLIAM A. ZOU 748
Moving Uncompressed Video Faster than Real Time ..... DON DEEL, MARC FRIEDMANN, and HOWARD GREEN 751
Professional Video Under 32-bit Windows Operating Systems ..... ALAIN LEGAULT and JANET MATEY 760
Correlation Between Objective and Subjective Measurements for Video Compressed Systems ..... MAURIZIO ARDITO and MASSIMO VISCA 768
31st SMPTE Advanced Motion Imaging Conference, February 6-8, 1997, New York City 774
David L. George Elected New SMPTE President 777
First Annual Spring Film Conference and Exhibition, Los Angeles, March 20-22, 1997 778